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Snakes from Northern Mexico

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This is the fourth and final report on the Chrapliwy-Williams 1958 Mexican Collection (*cf.* Williams, Chrapliwy and Smith, 1959 ; Williams, Smith and Chrapliwy, 1960 ; and Chrapliwy, Williams and Smith, 1961) , now reported in its entirety except for the material from Aguascalientes that is to be included in a review, now nearing completion, of the entire herpetofauna of that state.

We are indebted to the Research Board of the Graduate School of the University of Illinois for financing the field work ; to Dr. D. F. Hoffmeister, Curator of the University of Illinois Museum of Natural History, for use of certain field equipment ; to Mr. Luis de la Torre for framing an official letter of introduction ; and to Dr. Laurence Klauber for his helpful comments concerning the red *Crotalus atrox*.

All specimens are in the University of Illinois Museum of Natural History, unless otherwise noted. All color notes refer to preserved material unless otherwise stated. Localities may be found on the National Geographic Map of Mexico, or on the World Aeronautical Charts.

Leptotyphlops humilis segregus Klauber.

One (46018) 20.3 mi. S. Tlahualilo, Durango (state record) represents a southern range extension.

Total length 399mm. ; tail 9mm.; dorsal scales 279 ; scale rows around tail 10; scale rows midbody **14**; no supraoculars ; divided nasal ; long parietal touching posterior supralabials. Dorsal surface and head a uniform light tan ; ventral surface a shade lighter.

Collected at night on a surfaced road.

Arizona elegans australis subsp. nov.

Holotype.—Adult male, UIMNH 48721, 21 mi. SW. Loreto, San Luis Potosi, in Aguascalientes, Mexico, July 20, 1958, Pete S. Chrapliwy and Kenneth L. Williams. *Paratypes*. UIMNH 48724-5,

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6.5 mi. SE. Nombre de Dios, Durango; UIMNH 48723, 6.1 mi. SE. Nombre de Dios, Durango; and UIMNH 48722, 20 mi. SE. Nombre de Dios, Durango, all obtained on July 19, 1958, by the same collectors.

Diagnosis. Differs from *Arizona elegans elegans*, *arizonae*, *blanchardi*, *expolita*, and *phillipi* in having a shorter tail in males (ratio tail to total length in 5 males 12.4 to 13.8 per cent) ; dorsal pattern tending to become irregular especially on posterior half of body. Differs distinctively from *elegans* and *arizonae* (Dixon, 1959) in having a low dorsal count (highest count attainable) , 25-27.

Description of type (Fig. 1). Adult male ; total length 816mm., tail 112mm.; ratio tail to total length 13.7 per cent.

Head slightly convex on top ; snout rounded in dorsal view ; pupil nearly round ; head length from jaw angle to snout 21 mm., from lower anterior edge of orbit to snout 8mm.

Scales of head normal ; rostral hollowed below, slightly wider than high, bordered posteriorly by nasals, internasals and 1st pair of supralabials ; prefrontals bordered anteriorly by internasals, laterally by posterior nasal and posteriorly by frontal, supraoculars and preoculars ; parietals bordered anteromedially by frontal, by temporals and dorsal body scales ; supralabials 8-8, 6th, 7th, 8th enlarged ; infralabials 11-12, 6th on both sides distinctly enlarged, 3rd, 4th and 5th curving posteriorly with ends of 4th and 5th touching posterior chin-shields ; anterior chin-shields touching along medial line, bordered anteriorly by 1st infra-labial, laterally by 2nd and 3rd.

Dorsal scales 23-25-26, small behind parietals, enlarging posteriorly, smooth and nearly rhomboidal' in shape but with both ends rounded ; ventrals 191 ; anal undivided ; subcaudals 48, all divided.

Head dark brown except for lighter brown parietals and light ventral halves of supralabials ; just posterior to parietals two patches of brown separated by a narrow stripe of light color ; remainder of dorsal surface composed of brown blotches, with interspaced areas of light color ; dorsal brown blotches especially near midbody and posteriorly tending to become broken and irregular. Dorsal body blotches 42, in slightly subjective count ; 12 blotches on tail ; blotches at midbody from 3 to 47 scale rows wide, light spaces between them 1-2 scales wide ; laterally, between ventral edge of blotches and ventral scutes, an irregular scattering of brown pigment, not always distinguishable from ventral edges of blotches ; small black spots scattered throughout this pigment. Ventrums, throat and one or two rows of the dorsal scales adjacent to venter white.

Variation. All four paratypes males ; total length (in mm.) 832, 574, 542, 514; tail length 103, 80, 72, 70 ; ratio tail to total length

12.4, 13.8, 13.3 and 13.6 per cent, respectively. Dorsal scales at approximately midbody (highest count attainable) all 27 ; ventrals 202, 196, 188(2) ; anal undivided in all; subcaudals 46(2), 45, 44. Dorsal body blotches (slightly subjective due to their irregularity) 44, 43 (2) , 41 ; tail blotches 14, 13 (3) .

A single preocular on each side with or without a longitudinal shallow groove across surface ; supralabials 8-8, 6th and 7th distinctively enlarged ; infralabials 11 or 12, 6th sharply enlarged except in one specimen in which the 7th is the largest on one side. Little variation in remaining head scales.

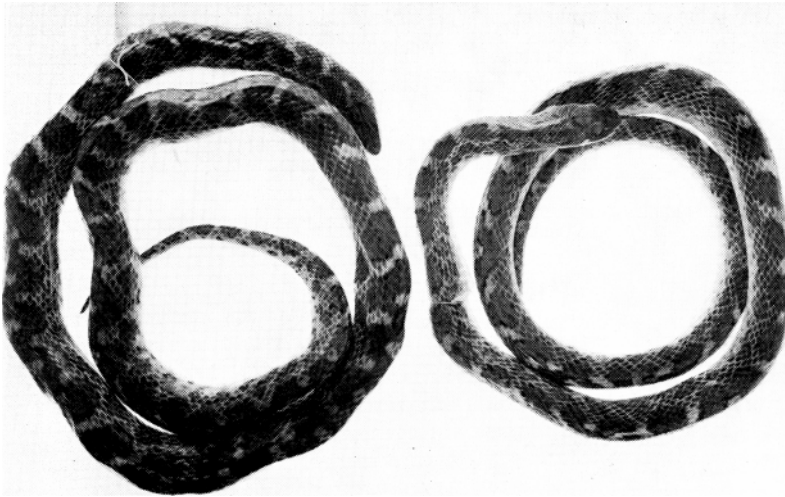


FIGURE 1. Dorsal view of *Arizona elegans australis*. Left, paratype, UIMNH No. 48724; right, holotype, UIMNH No. 48721.

The pattern varies from distinct blotches with black borders to indistinct blotches with no definite border. The blotches, dark to light brown, may be completely encircled by a black border, or may possess a dark border on the anterior and posterior edges with the lateral edges lacking a border. Blotches are from 8 to 14 scales wide. Smaller circular brown blotches may or may not occur beneath the lateral edges of the dorsal blotches. If they do not occur the area is usually suffused with brown pigment.

The tendency is for the blotches to form chains down the dorsal

surface of the back. None of the snakes have a complete dorsal pattern of separate, distinct blotches. Complete blotches are best evident in the anterior one-fourth or one-half of the body ; they tend to lose their identity posteriorly on the body.

A white or cream color is present middorsally between blotches or interspaced between the chainlike dark marks. Laterally, between the blotches, are brown and white flecks with brown being the dominant color. The head is light brown with irregularly scattered dark brown spots; a dark brown bar crosses the dorsal surface of the head just anterior to the orbits, with the lateral ends touching the anterior edge of the orbit and then continuing posteriorly from the eye to the angle of the jaw. The ventrum is white, except for scattered dark specks on lateral edges of the ventrals. The throat is white.

Relationships and Range.—Klauber (1946: 381-382) used tail length as a major characteristic in proposing a possible phylogenetic history of this species. The discovery of a short-tail form south of the western extremities of the long-tail group materially alters the picture. However, it is the opinion of the authors that Klauber's ideas are, in general, correct, with the following amendment here proposed : the range of the short-tail group originally extended through southwestern New Mexico on the east side of the Sierra Madre Occidental as far south as northern Jalisco, whereas the long-tail group dispersed to the northeast through Coahuila, Texas, Oklahoma and Kansas. Secondly (or perhaps concurrently) long-tail groups moved westward forming the group now called *phillipi* and perhaps *expolita*. However, similarity of pattern and scale rows suggest that *expolita* may be of hybrid origin, *australis* X an ancestral long-tail form. The present day absence of intermediate short-tail forms (in eastern Chihuahua and northwestern Durango) may be due to a climatic or geologic change, or perhaps to some competitive factor involved when the long-tail groups invaded the range.

Elaphe guttata emoryi (Baird and Girard) .

Five from the following localities : *Coahuila*: 8.8 mi. S. Paila (48129) ; 6.9 mi. SE. San Pedro (48130) . *Chihuahua*: 2.5 mi. N. Camargo (48131) ; 2.7 mi. S. La Cruz (48132) . *Texas*: 3.9 mi. E. Laredo, Webb Co. (48133) .

The authors follow Dowling (1951) in the application of the above name to the group formerly known as *E. laeta laeta*.

Measurements, scutellation and blotch counts are as follows (respectively, by locality) : total length (in mm.) 825, 870, 622, 429, 497 ; tail length 168, 171, -, 97, 120 ; dorsal scales (near midbody) 27, 27, 27, 29; ventrals 217, 213, 221, 211, 202; subcaudals 68, 63, -, 71, 67 ; supralabials all 8-8 ; infralabials 12-14; dorsal body blotches

irregular dark markings on ventrum and scattered dark markings on infralabials.

Ground color gray with brown blotches on dorsal and lateral surfaces of body; dorsal blotches distinctly larger than paralateral blotches. All blotches tending to have a black border. Pattern well developed, except in one faded specimen from San Pedro. Broken light stripes on 3rd and 4th (sometimes on part of 5th) scale rows.

A juvenile (48327) , 14 mi. S. Allende (Rt. 56) , Coahuila, has 31 scale rows near midbody, but fits the description of *E. guttata emoryi* in all other respects. Total length 365mm.; tail length 65mm.; ventrals 215 ; subcaudals 61; body blotches 41; tail blotches 17; 2 labials entering orbit.

***Hypsiglena torquata ochrorhyncha* Cope,**

Three specimens, all males, fit Tanner's (1944: 56) description of this subspecies. The authors have followed Smith and Van Gelder (1955: 146) in name application.

Localities as follows: 7 mi. E. Cuatro Ciénegas, Coahuila (48347) ; 3.9 mi. N. Galeana, Chihuahua (48348) ; 2.5 mi. S. Tlahualilo, Durango (48349) . Total length (in mm.) 366, 435, 179; tail length 53, 68, 31; ventrals 172, 162, 161; subcaudals 45, 47, 51; scale rows near midbody 21, at level of vent 17, 15, 16 ; supralabials 8-8; infralabials 10-10; preoculars 1-1 or 2-2; postoculars 2-2 or 1-1 ; loreals 1-1, longer than wide; dorsal body blotches 58, 49, 53 ; tail blotches, 20 in one, not distinct in two.

Dorsal body blotches involving 7-13 scales, separated by 1-1 light-colored scales; nuchal blotches varying from 1 blotch (Chihuahua specimen), to 3 (1 medial, 2 lateral) in the other two. Sixth upper labial less than one-half pigmented.

The Coahuila record represents a slight eastward range extension.

***Lampropeltis getulus splendida* (Baird and Girard) .**

Two specimens from 3.4 mi. NE. Villa Francisco I. Madero, Durango (48146) , and 3.4 mi. W. San Pedro, Coahuila (48147) , represent additional localities in the southern portions of its range (previously reported from Durango only by Zweifel, 1954: 147) . A single specimen (48145) was also collected 1 mi. S. Moctezuma, Chihuahua.

The specimens lack brown or yellow color in their pattern, which is otherwise similar to that of typical *L. getulus splendida*.

Total length (in mm., respectively, by locality) : 863, 643, 657 ; tail length 128, 91, 92; ventrals 206, 203, 208; subcaudals 54, 51, 50 ; scale rows 23-22-21, 23-22-19, 23-22-19; cross bars 75, 71, 73. All counts fall within variation listed for the subspecies by Wright and Wright (1957: 396) .

***Masticophis flagellum flavigularis* (Hallowell) .**

A male (48150) 4 mi. S. Rio Salado on Route 56, Coahuila. Dark

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bands narrower than light bands; no dark lines through scales. Total length 1320 mm.; tail 332mm.; scale rows near midbody 17; ventrals 182; subcaudals 104; two labials entering orbit.

***Masticophis taeniatus girardi* (Stejneger and Barbour) .**

A male (46021) from 9.8 mi. NW. Chihuahua City, Chihuahua. Total length 1192mm.; tail 412mm.; ventrals 206; subcaudals 163 scale rows near midbody 15 ; supralabials 8-8; infralabials 8-8; preoculars 2-2; loreals 1-1.

Another male (48148) was collected 11 mi. N. Zapata (jct. 106-60) , Coahuila. Total length 1490mm.; tail 465mm.; ventrals 201; subcaudals 128.

***Pituophis melanoleucus a flinis* Hallowell.**

Two specimens 34.3 mi. S. Tlahualilo (48522) , and 6.9 mi. NW. Berme j illo, Durango (48526) . Data are as follows: Total length (in mm.) 1080, 750; tail length 42 (damaged) , 98; ventrals 229, 224; subcaudals 49, 57; dorsal spots (body and tail) 48, 50. Also in the University of Illinois Museum of Natural History collection are two specimens (27565 and 27146) from near Cuencame, Durango.

***Rhinocheilus lecontei tessellates* Garman.**

Twenty-four specimens (48151-174) from the following localities show this to be a common snake in northern Mexico as suggested by VWebb and Hensley (1959: 256) . **Chihuahua:** 7 mi. SW. Aldama; 0.6 mi. S. Samalayuca; 9.5 mi. SE. Escalón; 2.1 mi. S. La Cruz. **Coahuila:** 17.6 mi. W., 8 mi. W., 2.6 mi. W. San Pedro; 6.6 mi. E., 5.6 mi. E. San Pedro; 3.8 mi. S. Matamoros; 3.9 mi. E., 16.6 mi. E. Paila; 3.5 mi. N., 1.3 mi. N. Parras; 11.8 mi. W. Saltillo. **Durango:** scattered localities 12.9 mi. S. to 27.9 mi. S. Tlahualilo. Also six (48175-180) other specimens were collected in Webb Co., Texas.

Body pattern highly variable ; red blotches varying from bands nearly encircling the body (exclusive of the ventrals) to isolated, small, middorsal blotches. Red blotches vary in width (near midbody) from 3 to 8 scale lengths. Dark blotches encircling the body (exclusive of ventrals) , with the lateral ends of the dark blotches varying in width from 1 to 4 scale lengths; blotches range from solid black, to heavy to moderate mottling of white in either lateral or dorsal areas, or both; they vary in width (near midbody) from 3 to 8 scale lengths. Black body blotches range from 20 to 27; tail blotches, 7 to 12.

The venter is normally a uniform light color ; however, 4 specimens have dark mottling scattered on the white. This variation does not appear to have any geographical significance.

The pattern of the young is more distinct than in adults. The lateral areas ventral to the red blotches have a small dark mark, but lack the excessive dark mottling typical of adults. The ratio of tail to total length does not appear to differ significantly from that of adults.

dorsal scale rows (near midbody) show the most uniformity with 23 rows occurring in all specimens; ventrals d' *d* 187-203 ; 9 ? 184-196; subcaudals d' *d* 45-47; 42-47 ; supralabials 8-10; infralabials 8-10.

The snakes were all collected at night on paved roads along dunes (Tlahualilo) and desert areas with sandy soil. The San Pedro specimens were in a region of rather intense agricultural activity.

***Tanana atriceps* (Gunther).**

The discovery of a specimen (48787) 25 mi. S. Tlahualilo, Durango, adds further evidence that *atriceps* and *nigriceps* are sympatric in at least parts of their ranges.

Total length 197mm.; tail 45mm.; ventrals 125 ; subcaudals 55.

Black cap not forming a V on its posteriorly directed end, but rounded. ***Tantilla nigriceps nigriceps*** Kennicott.

Four (48788-91) from the following localities: *Durango* (state record) : 29.4 mi. S. and 24.4 mi. S. Tlahualilo; *Chihuahua*: 2.6 mi. SE. Galeana; 8 mi. NE. Jimenez. Previously recorded in Mexico only from Progreso, Chihuahua.

The specimens fit Smith's (1942: 38) description of *T. nigriceps nigriceps* in having a black cap posteriorly extending over 3-5 scale lengths on nape. No collar. Data respectively as to locality : total length (in mm.) 211 ^y, 262, 235, 296 ; tail length 42, 50, 40, 63 ; ventrals 155, 149, 157, 147 ; subcaudals 46, 49, 45, 48.

Thamnophis eques eques (Reuss) .

One (48490) 24.8 mi. E. Aguascalientes, Ags., in Jalisco, seems to represent the northern-most record for this subspecies. Total length 570mm.; tail 117mm.; ventrals 158; subcaudals 65 (damaged) .

Thamnophis marcianus marcianus (Baird and Girard) .

Two records, 1 mi. E. La Cruz, Chihuahua (48478) , and 1.8 mi. E. Paila, Coahuila (48479) , are near the southern extremities of the known range for this subspecies. The La Cruz specimen is from approximately 30 miles south of the *T. m nigrolateris* record cited by Mittleman (1949: 247) from 10 mi. N. La Ciudad Delicias.

Data (respectively, by locality) : ^y, **d** ; total length (in mm.) 565, 540; tail length 114, 115 ; ventrals 150, 151 ; subcaudals 63, 58 ; combined totals 213, 209. Lateral stripe on third row on anterior half of body; scale rows (anteriorly and at tr. idbody) 21; preocular single; 2 labials entering orbit ; vertebral light stripe distinct, 1 and 2 half scales in width on tail.

Natrix rhombi fera rhombi fera (Hallowell) .

A male (48350) 0.6 mi. E. Sacramento, Coahuila, was collected dead on the road. Total length 710mm.; tail 179mm.; ventrals 147 ; subcaudals 76; dorsal scale rows 25-27-23 ; no suboculars; 4th and 5th supralabials touching eye.

Crotalus atrox Baird and Girard.

Three adult specimens (48492-94) from the Galeana area, Chi-

huahua, were collected at night on paved highway. All three were red with the dorsal rhomboidal pattern not sharply distinct. However, the red color has faded in preservative and the dorsal pattern is now readily distinguishable. A number of young *atrox* (48495-48502) was also collected in the area with none showing any indication of the red coloration. Except for the red color the three adult males are typical *atrox*.

An adult male (48491) from 4.9 mi. SE. Zavajza, Chihuahua, in Durango, is near the southern edge of the known range for that area.

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